

Landsat 4-5, Landsat 7 Surface Reflectance (Provisional) Product Guide: EarthExplorer Version

Version 3.3 - July 2016

The U.S. Geological Survey (USGS) offers on-demand production of Landsat Surface Reflectance data through EarthExplorer (<http://earthexplorer.usgs.gov>). Surface Reflectance data are available for Landsat 4 and Landsat 5 Thematic Mapper (TM) and Landsat 7 Enhanced Thematic Mapper Plus (ETM+) archived scenes, from 1982 to present, using the navigational features of EarthExplorer to select scenes. (EarthExplorer login required).

On EarthExplorer, select the desired date range, then conduct a search for areas of interest or enter Scene ID's in the Additional Criteria Tab. Then on the "Data Sets" tab, expand the "Landsat Archive" section and select "Landsat Surface Reflectance – L7 ETM+" or "Landsat Surface Reflectance – L4-5 TM". Returned results can be added to the shopping cart for order submission.

Order submission and completion emails will provide details about data processing and the location from which to download the data: <http://espa.cr.usgs.gov/ordering/status/>.

User Notes:

1. Only Surface Reflectance products are available through EarthExplorer. Source data, Top-of-Atmosphere (TOA) reflectance, and Normalized Difference Vegetation Index (NDVI) data products are available only through the Earth Resources Observation and Science (EROS) Science Processing Architecture (ESPA) Ordering Interface: <http://espa.cr.usgs.gov>.
2. Please refer to the Landsat 4-7 Surface Reflectance Product Guide: http://landsat.usgs.gov/documents/cdr_sr_product_guide.pdf for details about Surface Reflectance data products, including these caveats:
 - Landsat Surface Reflectance product has not been completely validated; the algorithm and subsequent output products are considered provisional.
 - Surface Reflectance products requested from EarthExplorer will be delivered in GeoTIFF format.
 - Landsat 4 and Landsat 5 TM scenes originally processed through National Landsat Archive Processing System (NLAPS) cannot be processed to Surface Reflectance. NLAPS scenes are formatted and calibrated differently than those processed through the standard Landsat Product Generation System (LPGS). NLAPS-based scenes will be automatically removed from user orders. A list of scenes can be found at http://landsat.usgs.gov/documents/L4-5TM_NLAPS.xlsx. The order status will be updated with this action and the remaining scenes will continue processing.
 - SR is not run for a scene with a solar zenith angle greater than 76°.
 - Users are cautioned against processing data acquired over high latitudes (> 65°) to Surface Reflectance.
 - Efficacy of Surface Reflectance correction will be likely reduced in areas where atmospheric correction is affected by adverse conditions:
 - Hyper-arid or snow-covered regions
 - Low sun angle conditions
 - Coastal regions where land area is small relative to adjacent water
 - Areas with extensive cloud contamination